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(56) Documents Cited

GB 2203278 A EP 0422774 A2 US 4879710 A

(58) Field of Search

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(54) Protecting the label side of discs

(57) A protector for compact discs or other discs containing digitally encoded material comprises an annular film 15 adhered to the label (non-read) side of the disc by adhesive and by the use of surfactant applied between the label 14 and the film 15. The annular film may be of transparent plastics material such as PVC, or have printed material or a label surface thereon. By the use of surfactant the film may be manipulated to the correct position on the disc before it is adhered to the disc when the surfactant dries.

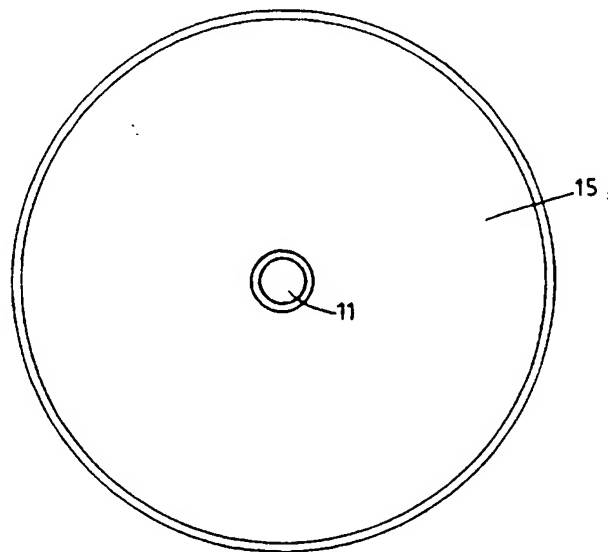


FIG. 2

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1995

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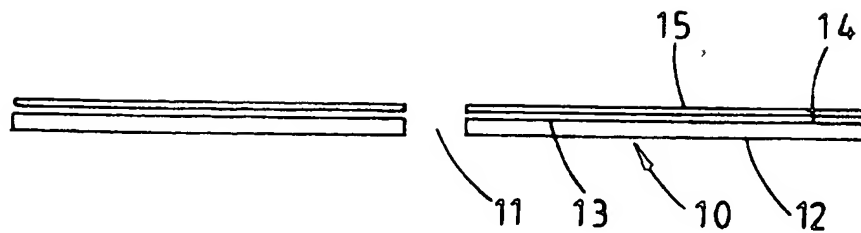


FIG. 1.

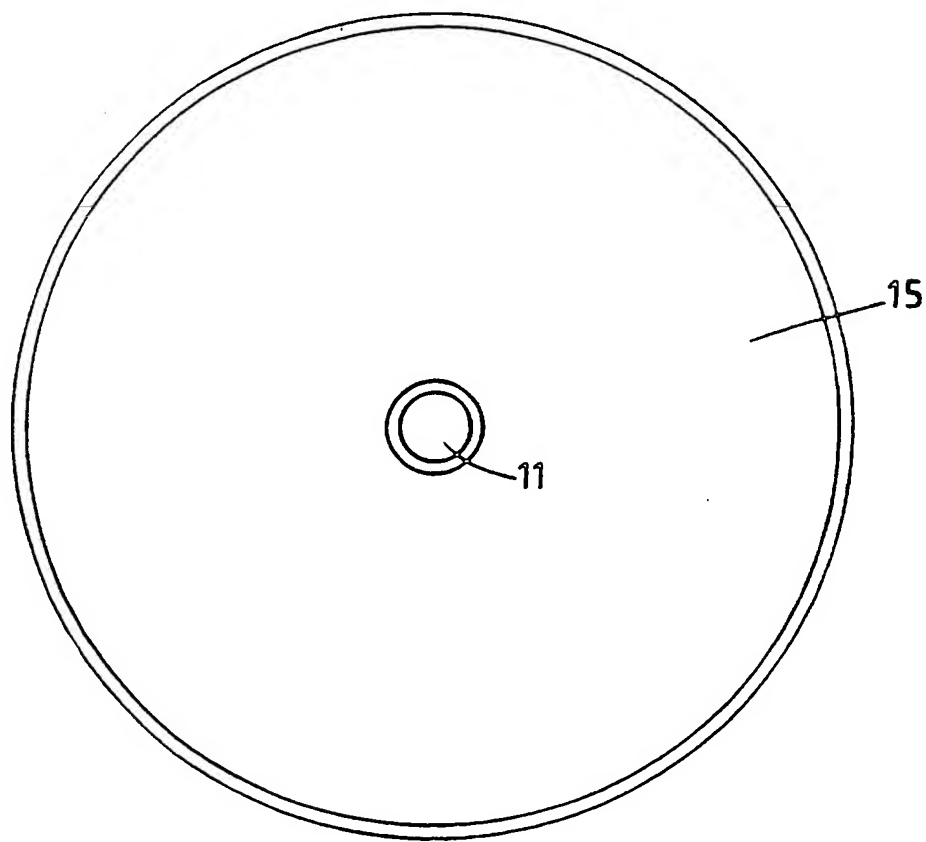


FIG. 2

Disc Protector

This invention relates to disc protectors and, in particular, to protecting means for compact discs or other discs containing digitally encoded material.

Compact discs conventionally have a read surface on one side and a printed label on the other side. There is usually provided a centre hole and a reflective layer of material is carried on the label surface under the label. Sometimes the label side of the disc is damaged and part of the reflective layer can also be damaged and this can cause the disc to be inoperable if damage arises over the tracks formed in the disc, the tracks occupying an annular area of the disc around the hole.

An object of the invention is to provide an improved means for protecting discs on the label side.

According to the invention there is provided a disc protector comprising an annular member in the form of a plastics film applied to the label side of the disc, the film having a layer of adhesive on one side and being applied to the disc by the use of surfactant applied between the disc and the film.

The invention also provides a method of assembling a disc and a disc protector, the disc protector comprising an annular film to be adhered to the label side of the disc, the method comprising the provision of an adhesive layer to the film, applying surfactant to the adhesive layer prior to application of the film to the disc, applying the film to the disc and manipulating the film to occupy the correct position on the disc so as to be in registry with the axis of the disc.

Preferably the surfactant is mixed with water for application to the film and the film is smoothed in a radially outward direction after application to the disc in the desired position, to smooth the film and to remove any excess surfactant. After the film has been applied to the disc the surfactant is allowed to dry to enable the film to adhere to the disc.

Conveniently the film is in the form of transparent plastics material whereby any label on the label side of the disc is visible through the film.

Dimensionally the film will have an inner diameter such as to fit around the hole and another diameter equal to or less than the outer diameter of the disc. Furthermore the film may cover only that portion of the disc bearing the tracks or a portion somewhat greater than the size of the tracks.

It will be appreciated that the film protects the label side of the disc without interfering with operation of the disc.

Further features of the invention will appear from the following description given by way of example and with reference to the drawing, in which:-

Fig. 1 is a cross section through a disc to which a protective film has been applied, and Fig.2 is a plan view of the disc of Fig.1.

Referring to the drawings a compact disc is shown (not to scale) to which has been applied the protector of the invention. The disc 10 has a central opening 11 and is of generally annular shape. One side of the disc 12 is termed the "read side" and the disc is made of transparent material. A surface 13 of the disc is encoded digitally and is applied with a reflective material. Over the reflective material is applied a label 14 usually bearing printed material on its upper surface and adhered to the disc 10 in the manufacture of the disc. The upper surface carrying the label is termed the "label side" of the disc 10 and it is this surface to which the protective film is applied, the protective film being shown at 15.

Suitable material for the film 15 is transparent plastics material in the form of an annular sheet having a central opening no less in size than the opening 11 of the disc and having an outer diameter equal to or less than the outer diameter of the disc. The annular film 15 should have a maximum inner diameter not greater than the diameter of the lead-in track of the disc and an outer diameter not less than the diameter of the lead-out track of the disc. Preferably the film 15 extends across the whole surface of the disc 10.

The protective film is primarily intended to be supplied to the compact discs of existing owners for fitting to such discs. When supplied the film carries an adhesive layer over one surface covered by a peel-off layer of coated paper such that the paper can be removed from the film to expose the layer of adhesive.

There is also supplied surfactant which may be of any convenient kind in liquid form. The user mixes some of the surfactant with water and applies the resulting mix to the exposed adhesive surface. The user then applies the film to the surface 14, the label carrying surface, of the disc. Due to the presence of the water/surfactant layer on the film the film may be positioned on the disc surface in the correct position by a sliding movement between the film and the disc. Once the film is in the correct position the film is smoothed using a straight edge or other tool moved radially outwards towards the outer edge of the disc thereby removing any bubbles, excess surfactant or other unwanted material which lies between the film and the disc surface. The film is thus made smooth and, upon drying, the film is firmly adhered to the label side of the disc.

The disc, with affixed film, is protected on its label side against damage to the surface 13 of the disc and the film also provides enhanced strength with the ability to wipe the surface clean.

If desired the film may have printed material on it, or a label surface to which the user's own identification may be applied.

It will be seen that the film sheet is readily applied to discs in the desired position without the need for guides and without the requirement for precise placing when the film is initially located on the disc. The surfactant permits the film to be accurately moved into position and, surprisingly, this does not effect the ability to obtain adhesion between the film and the disc.

A suitable plastics material for the film is PVC of the desired thickness for example 100 micros.

A paper applied to the film and which requires removal before application of the film to the disc may occupy the entire surface of the disc or selected portions such as inner and outer annular portions. The paper is readily removed from the film by being exposed at an edge or by having tear lines in conventional manner.

CLAIMS

1. A method of assembling a compact disc and a disc protector, the disc protector comprising an annular film to be adhered to the label side of the disc, the method comprising the provision of an adhesive layer to the film, applying surfactant to the adhesive layer prior to application of the film to the disc, applying the film to the disc, and manipulating the film to occupy the desired position on the disc so as to be in registry with the axis of the disc.
2. A method according to Claim 1 wherein the surfactant is mixed with water for application to the film and the film is smoothed in a radially outward direction after application to the disc in the desired position in order to smooth the film and remove any excess surfactant.
3. A method according to Claim 1 or 2 wherein the film, after application to the disc, is allowed to dry to enable the film to adhere to the disc.
4. A disc protector for compact discs comprising an annular member in the form of a plastics film applied to the label side of the disc, the film having a layer of adhesive on one side and being applied to the disc by the use of surfactant applied between the disc and the film.
5. A disc protector according to Claim 4 wherein the film is in the form of transparent plastics material whereby any label on the label side of the disc is visible through the film.
6. A disc protector according to Claim 4 or 5 wherein the film has an inner diameter such as to fit around a central hole in the disc and an outer diameter equal to or less than the outer diameter of the disc.
7. A disc protector according to Claim 6 wherein the film covers that portion of the disc bearing the tracks.
8. A disc protector substantially as described with reference to the drawings.



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Claims searched: 1-8

Examiner: Melanie Jennings
Date of search: 14 July 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): G5R (RB21, RB79, RB26)

Int Cl (Ed.6): G11B 7/24, 7/26

Other: Online: WPI, JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2203278 A (SANYO ELECTRIC)	4-7
X	EP 0422774 A2 (SHARP)	4, 6, 7
X	US 4879710 A (ILJIMA)	4-7

X Document indicating lack of novelty or inventive step

Y Document indicating lack of inventive step if combined with one or more other documents of same category.

& Member of the same patent family

A Document indicating technological background and/or state of the art.

P Document published on or after the declared priority date but before the filing date of this invention.

E Patent document published on or after, but with priority date earlier than, the filing date of this application.